

Atty Docket No. MEMS-0160-US
Appl. No.: 09/895,152

REMARKS/ARGUMENTS

Favorable reconsideration and allowance of the present patent application are respectfully requested in view of the foregoing amendments and the following remarks. Claims 1-4, 6-25, 27-28 and 36-42 are pending in the application.

Correspondence Address

Applicant's representative respectfully requests that the Office confirm that the correspondence address is directed to Customer No. 40575. A Change of Address form has been submitted herewith to ensure this change is made. However, if such has not been processed or received please advise the undersigned so the form can be resent.

Interview Request

Since this response is being filed in connection with a petition to revive, Applicant's representative respectfully requests that an interview be granted prior to issuing a new Office Action. Applicant's representative would like to discuss the previously presented arguments as they relate to the applied art in an effort to further prosecution of this application.

Reply to Response to Arguments in Advisory Action

Since the Examiner has maintained the prior rejections and has provided arguments in support of this position, Applicant will address the Examiner's response first.

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The Examiner appears to equate the different regions (130a-d) of the single four-wavelength chip with different writing passes. The fact that there are different diffractive regions, does not preclude multiple writing passes over the same path. In fact in contrast to the Examiner's statement, Mazed teaches that "the full exposure dose can be divided over many passes." (Mazed, col. 8, ll. 12). Applicant respectfully submits that this necessitates that the passes are performed along the same path so as to ensure a full exposure dose is delivered to each region.

The Examiner's response is silent as to the deficiencies of Feldman previously argued. However, Applicant wishes to emphasize that the general teaching of a reflow technique in Feldman does not render aspects of the Applicant's claimed combinations obvious. In fact Applicant's own specification in paragraph 36 expressly states that the "[t]he objective in practicing this solution is to not melt or reflow the bulk of the photosensitive material but rather to smooth surface irregularities without changing surface contour." Accordingly, Applicant respectfully submits that the reflow technique of Feldman fails to teach or suggest Applicant's claimed combinations. For example claim 42 specifies "wherein a depth of melting is determined as the root mean square of roughness of the surface layer", which neither taught or suggested by Feldman.

Additional arguments follow that reiterate Applicant's prior position and Applicant respectfully requests the Examiner's reconsideration in view of the foregoing amendments and arguments presented herein.

35 U.S.C. § 102 & 103 Rejections

Claims 1-4, 6-7, 23-25, and 27-28 stand rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by Mazed (U.S. Patent No. 6,411,642).

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Claims 8-22 and 36-42 stand rejected under 35 U.S.C. § 103 (a) as allegedly being unpatentable over Mazed (U.S. Patent No. 6,411,642) in view of Feldman et al. (U.S. Patent No. 6,071,652, "Feldman").

Applicant respectfully traverses each of these rejections for at least the following reasons.

The Examiner relies on Mazed, in the 35 U.S.C. § 102(e) and the 35 U.S.C. § 103(a) rejection, to allegedly show, suggest, or teach "performing multiple passes (at least four passes constitutes four exposed regions such that no two passes write along the same path)" and cites Mazed (col. 2, lines 50-55; col. 7, ll. 37-59, and col. 8, ll. 1-57). Applicant respectfully submits that Mazed fails to teach multiple passes where each pass is offset such that no two passes write along the same path. Instead, Mazed suggests that "the full exposure dose can be divided over many passes." (Mazed, col. 8, ll. 12). Applicant respectfully submits that this necessitates that the passes are performed along the same path so as to ensure a full exposure dose is delivered. In contrast, the present application clearly states that "One technique for maximizing averaging effect is to purposely shift each pass by some very small distance (or offset) such that no two passes write along the same path" (Specification, par. 51). Clearly Mazed suggests no such "offset."

Further, as currently amended claim 1, for example, specifies a "gray scale pattern". In contrast, the applied reference, Appears to be directed only to a binary mask. The grayscale mask is used to generate a continuous curved or non-linear structure (due to the gradation of the mask) in the photosensitive material. However, the applied reference discloses a mask that generates a discontinuous profile in the photosensitive material (i.e., material is either left or eliminated creating a step-wise

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profile). Accordingly, Mazed further fails to teach this feature of Applicant's claimed combinations.

As stated in MPEP § 2131, "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the ...claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The references applied by the Examiner neither expressly nor inherently describes every feature of Applicant's claimed combinations as detailed in the foregoing arguments. Therefore since Mazed fails to show a feature of independent claims 1 and 23, as discussed above, these claims are allowable over the references. Additionally, claims 2-4, 6-7, 24-25, and 27-28, which depend directly or indirectly upon one of the claims 1 and 23, are allowable for the same reasons claims 1 and 23 are allowable.

Further the Examiner indicates that Feldman allegedly shows a causing a reflow in the photoresist (melting) to eliminate roughness, wherein the reflow (melting of the photoresist) is performed to eliminate obvious discontinuities (Office Action, page 4). However, Feldman in actuality states (emphasis added):

When forming a refractive element using a gray scale mask that does not itself have a continuous profile, such as the gray scale mask formed in accordance with the present invention, it may be desirable to reflow the photoresist before the final step 38 of forming the element. This reflow would involve only heating the photoresist up by a small amount such that any obvious discontinuities arising from the step wise nature of the gray scale mask will be eliminated (Feldman et al., col. 8, ll. 7-14).

As clearly stated in Feldman, the reflow process is used to eliminate "obvious discontinuities arising from the step wise nature" of gray scale mask. Feldman fails to

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show, suggest, or teach reducing general roughness error. Claim 8 states: "melting at least a portion of the photosensitive material, whereby general roughness error is reduced" and Claim 36 states: "melting a surface layer of a portion of the pattern to reduce general roughness error of the surface layer of the portion of the pattern." As noted in Applicants specification in paragraph 14, the general roughness error as "caused by the slight variations in the dose of the writing tool, usually an electron beam (e-beam) or laser. In the case of the half tone process, the chosen pixel shape scheme may cause this error. The period of oscillation for the general roughness error is typically on the order of 10 microns."

To establish a *prima facie* case obviousness under 35 U.S.C. § 103, the Examiner has the burden of meeting the following three basic criteria: (1) the prior art must teach or suggest all of the claim limitations; (2) there must be a reasonable expectation of success; and (3) there must be some suggestion or motivation, either in the art or knowledge generally available to one of ordinary skill in the art to modify the reference or to combine teachings (M.P.E.P. § 2143)(emphasis added). Thus, Mazed and Feldman, assuming the references are combinable (which Applicants contest), fail to show, suggest, or teach all of the claim features of Claims 8 and 36.

The dependent claims are allowable at least by virtue of their dependency on the above-identified independent claims. See MPEP § 2143.01. Moreover, these claims recite additional subject matter, which is not suggested by the documents taken either alone or in combination. For instance, the Examiner has not alleged or shown that the references teach or suggest the specific heating sources or requirements claimed such as in claims 13-17.

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CONCLUSION

In view of the foregoing amendments and remarks, it is respectfully submitted that the application is in condition for allowance. If the Examiner believes that any additional changes would place the application in better condition for allowance, the Examiner is invited to contact the undersigned attorney, at the telephone number listed below.

Respectfully submitted,
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